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JANUARY 10, 1872.

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By order,

MILTON Y. KIDD,
Chief Clerk.

REPORT

ON THE

OYSTER FISHERIES:

Potomac River Shad and Herring Fisheries,

AND THE WATER-FOWL OF

MARYLAND

To His Excellency the Governor

AND OTHER

COMMISSIONERS OF THE STATE O. P. FORCE,

JANUARY, 1872.

REPORT
ON THE
FISHERIES AND WATER-FOWL
OF
MARYLAND.

JANUARY 1ST, 1872.

*To the Honorable Commissioners of the
State Oyster Police Force:*

GENTLEMEN—As the General Assembly meets at this time, I have thought it best to extend my bi-monthly report for November and December, so as to give a general view of the condition of our Fisheries and the water-fowl interest, that you may make such disposition of it as in your judgment it requires, for Legislative action or public information.

I will first treat of the off-shore Oyster trade, taking its branches—dredging, tonging, cultivation, &c., *seriatim*.

DREDGING.

The Chesapeake and its tributaries have naturally the most productive and extensive Oyster beds in the world, about equally divided between the States of Maryland and Virginia; but, all things considered, the beds of Maryland are the most remunerative, although the Oysters of Virginia are of a superior quality.

Our Oyster beds extend from Swan Point, Kent county, opposite Baltimore, southward, down to and up the Potomac for forty miles—total distance, one hundred and twenty-five miles; and east and west across the Bay and Tangier Sound, up all their tributaries as far as salt water reaches, in all depths of waters—in fact, wherever there is salt water in Maryland, we have Oysters.

The natural production of this vast field has been, and is still, so great that the labors of the fishermen are sufficiently remunerative for their comfortable support, and to enable the packers or dealers in Oysters to accumulate large fortunes without the *necessity* of resorting to cultivation. Like the fruits of tropical regions, we have only to wait for the seasons, nature has done everything—only the fruit is to be gathered.

This bountiful offering of Nature has, of course, caused the employment of those means for taking the Oyster that will the most surely enable labor to realize the greatest profits, and hence we find upon our waters between six and seven hundred vessels, varying from five to sixty tons burthen, equipped with improved machinery for taking the greatest quantity of Oysters from the beds in the least possible time, regardless of any consideration other than the *immediate* profits derived.

These vessels are generally of superior models, are fast sailers, and manned by hardy, daring seamen, but uneducated men, reckless of consequences, who live “from hand to mouth” in this trade, and cannot take into consideration the great fishing interest of the State, and work intelligently with a desire to preserve and build up the trade as a *permanent* means of support to themselves and of revenue to the State.

It is more like a general scramble for something adrift, where the object of every one appears to be to get as much as he can before it is lost.

Dredging has been going on with us for fifty odd years, commencing with a few small vessels with light dredges, and gradually increasing to this time to hundreds of large sea-going craft, manned by seven or eight men each, and heavily equipped, answering the demand for Oysters as it extended beyond our borders, and the art of “canning” enabled us to keep them in a state of preservation.

The effect has been that a few persons—some packers or dealers—have accumulated large fortunes; the dredgers and other laborers have lived for the time, and only lived, whilst the Oyster beds of the State on which the dredgers are allowed to work, have, by over-working, been greatly reduced and brought to produce an inferior Oyster, so that in trade in this country the distinction between the dredged and tonged Oyster is well understood.

There is no question regarding fisheries in this country and abroad that has given rise to a wider difference of opinion among the educated and uneducated, the scientist in his researches and the toilers of the sea, than the effect of dredging upon Oyster beds.

Scientific men are unable to come to any conclusion because they do not live *afloat* and engage in the business, and can derive no personal knowledge of cause and effect therein; and the fishermen from whom they obtain their information are warped in their opinions by the fear of adverse legislation, the furtherance of merely local interest, or have taken in view only local causes and conditions. This fact is evident, not only in Maryland and Virginia, in conversation with our packers and fishermen of different branches, but it is shown in the very able report just "presented to both Houses of Parliament by command of Her Majesty," upon "Oyster culture in the United Kingdom and France, 1870;" a report which, from the character and position of its authors and the assistance rendered them by the Government of England in their labors, will hereafter be accepted as standard authority upon Oyster culture.

The question as to the effect of dredging upon the quality and growth of the Oyster, is still more obscure, in a general sense, in this country from the fact that it has not yet become necessary to *study* the subject—the almost unlimited natural supply absorbing all our attention in merely getting the Oyster to the nearest market. The time however has arrived in this country when the more intelligent fishermen are themselves complaining that the beds are over-worked; that there are too many dredgers in the business, causing the dredged Oyster to become a drug in the market: and legislation is asked for to remedy the evil.

During my service of nearly four years in the enforcement of the fishery laws in this State, I have given this subject much patient consideration based upon the writings of those at home, and abroad, and my own experience on duty, and have come to the conclusion that dredging is not an injury, only when strictly regulated by law, that is, confined to certain months of the year when the Oyster does not spat; that only dredges of a certain weight and size be used; that the dredgers be required to carefully cull their Oysters whilst on the beds, and to throw back *thereon* all Oysters under a certain size, and all the separated shells; that the Star fish—Winkles—and all enemies of the Oyster, together

with grass, weeds, and such things as tend to choke the beds and that may be brought up in the dredges, be retained on the decks of the vessels until chopped up and then thrown overboard ; that dredging be restricted to one-half of the dredging grounds of the State each year, allowing the other half to remain undisturbed for a whole season, which, taking the close time into consideration would give each half alternately a rest of about seventeen months. Such regulations, if enforced, will increase and preserve our Oyster beds, but the careless improvident manner of dredging in this State is slowly, though surely bringing us to the same condition in which we find the Oyster resources of England and France—Oysters selling in England in 1870 at \$50 per bushel but still in such demand even at that price, that \$20,000,000 worth are annually consumed in the Kingdom, and they are now running *our* Oysters across the Atlantic to re-stock their exhausted beds.

Dredging in Europe is, to a certain extent, a necessity at nearly all seasons ; but the conditions are widely different from those existing with us.

The rise and fall of the tide there is from fifteen to forty feet, thus leaving some of the beds bare twice a day. This intertidal belt, as is always the case, is the receptacle of all the marine rubbish that can collect, and attracts the numerous enemies of the Oyster in the greatest numbers, that come and go at all times, for it must be remembered that the climate on the coasts of England and France is much milder than with us, being tempered by the action of the Gulf stream, and hence promotes the accumulation of marine matter. Frequently, too, one heavy gale of wind will alter the character of the surface of every Oyster bed, and but for the immediate use of light dredges the Oysters would be smothered.

The Star fish or "Five Fingers" are said to "come in swarms," but when they experience the crushing effect of the dredge "to roll themselves up" and disappear with the next ebb tide.

Their dredging vessels are about half the size of ours, and the dredges much smaller and lighter.

The dredging regulations there are rigidly enforced, and they embody every precaution that can tend to the increase and development of the Oyster.

With us the dredges are large and heavy, and our large vessels drag them with great force and effect.

We have no regulations about culling the young Oysters and throwing them with the shells back upon the beds. Our beds are comparatively clean, and the enemies of the Oyster do not "come in swarms" with us and take possession of a whole bed.

Our dredgers take to market every Oyster from the smallest to the largest—they all find a ready sale because as they are to be hermetically sealed and probably exported to the antipodes, small as well as large go to fill up, and the difference is not known in far off regions.

The dredger therefore cannot afford to cull his Oysters carefully and throw the young ones back upon the beds in order that they may grow and increase.

In Europe they are required to do this—but with us in every way the depletion and destruction goes on under the operation of the dredge. Hundreds of times have I gone upon the decks of our dredgers and found them putting below their Oysters, a large portion of which consisted of the young not over a year old, and the same Oyster is seen in the packing houses when opened after coming from the steam boxes, not larger than the last joint of the little finger. What chance has an Oyster bed that is worked to this extent?

There is all the difference that there can be between dredging to excess, as we do, and not dredging at all. As I said in my report of 1868-9, that, if we do not dredge at all, large "oyster rocks" will form in the course of time, as in the James river, like immense cones, frequently rising to the surface from depths of from ten to sixty feet. One such spot, had it been lightly dredged a month or two each year, would in a few years have thickly covered a square mile with oysters. But we go to the other extreme, and give the Oysters no respite from our enormous dredges. They *cannot* increase and grow while we take them as we do, and in such quantities. As a proof of this I can name several once plentiful Oyster beds, each covering several square miles, that have been so destroyed by the dredgers that now it will not pay a canoe to go out and work upon them.

If any one, whose opinions are not biased by personal interest, or cramped by local appearances, will spend a season upon our oyster beds generally, he will have no difficulty in judging for himself of the effect of the dredge.

In my report for 1868-9, I stated that "when Oyster beds have become reduced to a certain degree in our waters, they will soon cease to reproduce at all;" and now we have

the report of the Commissioners on Oyster Culture in the United Kingdom and France, giving us a very acceptable solution of this fact.

It says: "In all climates and in all its varied species, the Oyster is supposed to be hermaphrodite, and its characteristics appear to be the same wherever it is found.

"The precise manner in which the impregnation of these molluscs is effected is yet an unsolved enigma. There are various theories extant upon the subject, which have all been more or less under public consideration and discussion. One of the latest is that put forward by Dr. Kellart, which is supported by Mr. G. W. Hart, one of the members of this commission, viz: that there is a mutual fecundation partaken of by all the individuals composing an Oyster bed—a general emission of spermatozoa taking place at a period somewhat prior to the formation of ova in the ovaries.

"If this view be correct, it would serve to explain much of what has hitherto been the great *casus belli* between those who hold the opinion that the present scarcity of Oysters is caused by failure of spat, and those who attribute the failure to overdredging.

"Viewed in this light, it would appear that the aggregation of Oysters into beds is a provision of nature to effectuate this mutual impregnation, and that where an Oyster bank has been so greatly dredged that the component individuals upon it are at great distances from each other, the reproductive powers of the bed may be almost entirely destroyed. Unless the tide or current in such cases brings the spermatozoa within reach of adjacent Oysters, a bank so reduced ultimately (and quickly) dies out, to the great astonishment of those fishermen who can testify (and that truthfully) that there has always been Oysters upon it, and that it was not, in their opinion, *exhaustively dredged.*"

Again, in speaking of the scarcity and high price of Oysters in England and France, it says: "But the principal cause of the scarcity is attributable both in England and France to over-dredging. * * * No better illustration can be given than the advantageous position which Ireland occupies, when compared with either of the other countries.

"That her natural beds have suffered much less from exhaustion may be attributed in a great measure to the enforced close-time and other salutary regulations, made by

the commissioners of Irish fisheries, which are not in existence in England, and only lately came into operation in France."

These statements are put forth in countries where small vessels and small dredges are used, and where the beds require far more cleaning than ours.

During the present season I have been frequently applied to by the more intelligent fishermen, to do all in my power to get the Oyster law amended so as to increase the close-time, some of them being shrewd enough to perceive the reason for the depreciation of their Oysters in the market, and wishing to remove the cause before it is too late. The Oyster dealers located near the beds in different parts of the State are also taking steps to prepare for the decay of the dredging interest, and are availing themselves of the privileges extended by law to plant and cultivate.

I am about half of opinion that the sooner the dredgers exhaust the beds they are allowed to work upon, the better for all interested, because we will sooner get rid of the vultures, the general scramble, and engage in the peaceful and more profitable business of cultivation.

This vast Oyster interest, worth four million dollars to us annually, will then become a study, and, like farming, take its place in the intelligent industry of the State.

I am inclined to this opinion, too, because I do not believe we can get a law enacted confining the dredgers within reasonable limits.

They are a large class of men from every tide-water portion of our State, who exercise a powerful influence through their representatives, directly in the Legislature, and indirectly through the wealthy dealers who profit by their labors. Besides, it is difficult to educate people on shore to understand so thoroughly matters afloat as to be able to pass suitable laws to regulate them. They will naturally be influenced by men in the business, until some dire necessity concentrates public attention upon the one object, and thus, I suppose, in our Oyster trade we must follow the current that has drifted others to where things can be seen by the light of sad experience.

There is, however, one cogent reason for restricting the operations of the dredgers, and that is, the other branches of the Oyster trade *must* have protection, and that cannot be secured them if an unrestrained power lies with the well-equipped dredgers to do pretty much as they please.

To report that our *dredging* interest has increased since my last report of 1869-70, is simply to say that more vultures have come to the feast, a greater scramble has gone on, by which a little more money has flowed into the Treasury for the time, from *this* source, but a still greater sum concentrated in the hands of the few who have shrewdly profited by the occasion. Our Oyster resources have, however, decreased in an inverse ratio.

During the summer I inspected the Oyster fisheries in Chincoteague Sound, and the lower part of Sinepuxent Bay, along the shores of Worcester county, where the dredge (as I was informed) has never been used, and found a lively trade going on, but was much surprised to see the foul, unclean condition of the beds, and that the Oysters were allowed to grow in clusters, and choke and deform each other.

The generally shallow water of the Sound preventing, however, the formation of very large or extensive Oyster rocks.

The fishermen appeared to be perfectly unconscious of the great resources of the Sound if they would clean their beds, and the advantage they possessed in this vast sheet of shallow water so near the ocean, that its temperature, by the ebb and flow twice a day, is kept comparatively mild. It is safe to say, that if a month or two of each year was devoted to cleaning the beds, getting rid of the marine fauna and flora that infest them, and choke the Oysters, five times the present yield would be realized, and time would be saved thereby in the end, because of a boat-load taken from the beds now—not more than one-third the mass consists of marketable Oysters, but if the beds were clean, very little labor would be required in culling.

The Oysters in the Chincoteague are, from their peculiar richness and saltiness, the finest I have ever eaten.

No more convincing evidence can be had of the evil effects of the two extremes in the management of Oyster beds than we have in the Chesapeake Bay, where the beds are over-dredged, and in the Chincoteague Sound, where they are not dredged at all. Here is a case within our own borders, and it corresponds, in every particular, with what has been going on in Europe as far back as we have any history upon the subject. Another quotation from the English report on Oyster culture as applicable just here, and I have done with this branch of the subject:

“ With respect to the natural banks of France, most of them became so denuded of Oysters, down to 1850, as to be hardly worth fishing, and some, formerly of great importance, have been all but destroyed.

“ The most important authorities on the subject in France combined in attributing the exhaustion of the natural banks mainly to over-dredging.

“ In 1850 the French Government became alive to the urgent necessity of adopting stringent measures to prevent the threatened destruction of the comparatively few that remained on the natural banks, as well as to endeavor to replenish them when exhaustion had taken place.

“ The laws for this subject are very effective.

(“ *Art. 2*). The beds should not be opened for fishing until the Spat has acquired strength to resist the action of the dredge.

(“ *Art. 5*). When a bed has well established breeding capacities a fourth or fifth part of its total area should be set apart as a reserve, and dredging over such part entirely prohibited.

(“ *Art. 6*). A Fishery guard boat should, whenever practicable, take part in the working of each bed.

(“ *Art. 10*). When a bed is foul or encumbered with weeds or other matter noxious to the development or adherence of Spat it should be opened for dredging until cleaned.

(“ *Art. 11*). Beds on which there is never any production of Spat should be opened all through the season.

(“ *Art. 12*). After the working of any bed is over it should be carefully inspected and, if necessary, replenished with proper cultch, stones, shells, &c.”

The wonderful increase in the yield of the natural bed of Cancale from 400,000 in 1815 to 70,000,000 in 1847 and the subsequent equally rapid decrease is a subject which, as it bears upon the restrictions necessary for the Irish deep-sea-beds, deserves attention.

“ The return is given at length in Appendix C.

“ Here we have a long period of rest and almost absolute cessation of dredging, and the fact of a vast accumulation of Oysters taking place.”

“ Then follows the onset of a large fleet of boats without restrictions, which produces in a few years the destruction of the bank. Comment is needless.

“ Similar argument in the main points is presented by the returns of the public beds of Arcachon; and we are

happy to be able to say that the present regulations are already producing a steady improvement in the fisheries."

"The reasons assigned by the numerous witnesses examined as to the cause of the decrease on many beds around the coast of the United Kingdom were altogether hypothetical; nothing could be well imagined more contradictory, inconsistant, and irreconcilable than the assertions of persons, even from the same locality, each giving a different account as interest, prejudice, or opposition to what they deemed encroachments on their rights, prompted.

"The only thing that could be relied on as a fact was the undoubted decrease of the Oysters, but to account for it according to the evidence, was simply impossible. *Pari passu*, however, with this diminution was made evident the fact of a large increase in dredging."

The State of Virginia has wisely restricted dredging to a portion of her eastern shore and consequently the remaining large Oyster area of the State is in peaceful and quiet possession of prosperous planters and tongsmen who drive a thriving trade with vessels from all parts of the country that come for a superior quality of Oysters; and a more certain revenue is paid to the State from the fact that as the beds are worked they are inexhaustable—moreover the annoying agitation of the Oyster question, in the Legislature every session, so much to be deplicated, is partially avoided.

We may conclude then that dredging as *carried on in our State*, is an evil ever increasing—and will in time surely lead to distress and regret—a direct evil as it affects the Oyster beds themselves—and indirect, in its influence upon this great resource, by cramping and keeping back the other branches of the trade. To restrict dredging at present will of course decrease the revenue of the State at the same time, but a decrease has got to come *anyhow* as things are going on. The former decrease, however, would be but the dawn of a new era, when the Oyster trade would be opened up to us on a scale insuring prosperity and plenty for all time to the individual and of course to the State. The latter may for years to come, as on the coasts of England and France, bring depreciation of property, poverty and distress along our shores.

It is not to be inferred, however, from all the evil effects of dredging we know of, that it should be stopped altogether; for it is clearly shown that *light* dredging at long but regu-

lar intervals is a decided advantage—a necessity in keeping the beds clean and spreading the oysters.

In addition to this, there are immense beds in our State where the water is too deep, and others afar off from land where the weather is too rough and uncertain, particularly in the winter, to be worked by any other method.

This immense yield would be lost to our people but for the dredge.

As the case is working now, however, the dredger will rarely go to those deep and off-shore oyster beds, when he has a *chance* of depredating in shore, in smooth, shoal water, where less labor and time is expended and greater profits derived.

I hope the necessity for stringent regulations for this branch of the trade has been here made apparent.

Appended to this report is a table showing the amount of material, labor, &c., employed in our dredging fleet, the quantity of Oysters taken, and the value thereof, since my last general report; also the number of arrests, trials, and fines imposed. Under the head, "The Oyster Law," will be found proposed changes in the law to meet the condition of our Oyster interest.

TONGING.

Under this head are classed those men who carry on the trade in small boats, from thirty feet in length down to any size that will float a man and his load.

As these men do not live afloat, they are not generally *dependent* upon the trade for support, but at the same time cultivate a few acres of ground, and raise many of the necessities of life; but their lands and improvements are valued in proportion to the value of the adjacent Oyster beds, and they are assessed and pay taxes accordingly. These are the men whose labor requires the fostering care and protection of the State, because this labor has been directed in the proper channel, and the men acquire, after long years of toil, that knowledge of the Oyster in the different localities, and the circumstances best adapted to its nature and growth, of which the planter must avail himself in the future, when it is to be hoped the trade will be established upon a sure and permanent basis.

The instrument used in tonging is similar in appearance to two large garden rakes, with long handles, in proportion to the depth of water, hinged together near the rake part.

The boat is first made stationary over some thickly covered portion of the bed, and the tongs or rakes used all around her as long as Oysters in sufficient quantities can be reached. A boy is generally taken along, who culls the oysters and throws back those which are too small for market, together with the shells, thus partly covering the space from which the masses were first taken, with young oysters and congenial substances, and leaving that part of the bed in the very best condition for future increase and growth.

The other portions of the bed are, therefore, left undisturbed for the time.

It is evident from *this* process that no injury is done the beds, but that almost an infinite number of tongsmen could work them to advantage, if all the shoal water was left undisturbed by the dredgers, as it should be.

The shoal-water natural beds of the State, reserved by law for tonging only, are generally located on the bars and banks extending into the bay, and in the mouths of the rivers, bays and inlets; that is to say, in the direct track of the large craft navigating our waters. The tonging interest is, therefore, at the mercy of those dredgers who do not regard the law, and I am sorry to say there are few exceptions.

The rough weather that prevails during our oyster season, the exposed position of the beds, and often their great distance from the homes of the tongsmen, render this employment of these men very precarious. Probably there are not more than two or three days out of a week on the average during the winter that they can profitably work, and as they cannot tell how the weather will be beforehand, much time must be thrown away in waiting for a chance to go out, and in going out to a distance and having to return disappointed.

The small boats being open, and affording no shelter or warmth, the exposure is very great. Every rakefull of oysters is brought up *by hand*, dripping with water, which in severe weather freezes as soon as the oysters are dumped in, and the tongsmen must necessarily stand in this wet, half-frozen condition until his load is completed.

All this would seem to be enough to endure for a living, but when we add the destruction of their finest beds, and the risk they are at of being run down by the dredgers if they oppose them and attempt to assert their rights, and the threats of burning or carrying off their property along shore,

which are very often carried out, the life of a tongsman seems hard indeed. It is well to keep constantly in view that our Oysters are worth four millions annually—more than twice the value of the whole tobacco crop of the State—and this fact will cause us to recognise the importance of the subject as we discuss it—for people are not apt to appreciate things with which they are not associated or come in constant contact with. To some landsmen, too, the fisheries appear an abstract subject, in which they are not particularly interested, and had better leave the regulation of to those who are; but the difficulty is that the fishermen and those with whom they trade directly will not and cannot, by reason of such a diversity of interest and opinion, regulate the subject, and they *must* look to their representatives and all in authority to act in their behalf. Is it not the duty, then, of the representatives to study the subject in detail, in order that impartial and wholesome legislation may be effected?

The tongsman are generally an uneducated class of men, each one confined to and trading in his particular locality, acquiring local notions and prejudices which are hard to eradicate.

The Oyster laws do not bear equally upon them, and they become jealous and suspicious. Each one has an idea that the law should be so framed as to suit his particular way of working and trading; these ideas are communicated to their representatives, who meet in Assembly with the object of obtaining especial favor and protection for their several constituencies; and just here comes the rub. No conclusion satisfactory to all can be arrived at, and the Oyster law becomes a compromise. If, however, the Oyster question was better understood *on shore*, local ideas could not obtain so firm a seat.

Owing to the fact that we export such quantities of Oysters to foreign countries, the labors of the dredgers and tongs-men seem to tend towards different objects. The dredgers catch for the foreign and the tongs-men for the home market.

The dredged Oysters are of all sizes and conditions. The dredger cannot afford to throw away anything; he sells by the load—good, bad and indifferent—and doubtless it makes no difference to the heathen Chinee or the King of Dahomy in the can, so long as he gets the flavor.

But at home we know better ; we don't even want the best of canned Oysters, unless beyond the reach of railroad express. We have all had a taste of the fresh raw bivalve, and when Americans have wants they are very apt to gratify them. Consequently we see casks and boxed cans of fresh Oysters packed in ice, when the weather is mild, and sent to the extremes of the country.

These Oysters must be selected, and just in here comes the tongsman's labor and profit. If his work is harder and more uncertain than that of the dredger, his market is surer and his profits are greater.

To secure these fresh select Oysters for the home market we see it made an object for stretching out railroads towards the Oyster regions all over the State, for tongsmen cannot lose the time and take the risk of running great distances from his working grounds in small open boats, with heavy loads in ; they want a market near at hand.

To be sure, large vessels can buy from the tongsmen, and the dredgers can select their Oysters and run them to market for the raw trade ; but there is a risk, for a large vessel may get a load in, and when she is ready to sail the weather becomes very mild and the wind ahead, and by the time the Oysters are at the first market and shucked, they are not fresh enough to put up and express.

Each tongsman runs his own load of say ten to fifty bushels ; their market must be close at hand, if at all ; the risk is very little, and it is divided. An exception to this is Crisfield, the terminus of the Delaware and Eastern Shore Rail Road, in the very heart of the best Oyster region. The vessels, large and small, dredge and tong the finest Oysters in sight of the railroad depot, and the cars are loaded and in Philadelphia in a few hours after the Oysters are taken from the water. Crisfield is an evidence of the sudden turn which the Oyster trade has taken within the last twelve months. The Oyster houses are rising as if by magic, not only from the marshes, but from the very water where, a few months ago, vessels used to anchor, and all to supply the demand for the fresh *raw Oyster*, for I do not know of a *steam house* in the place.

This will be the case wherever a railroad can be run to a prolific Oyster region ; large as well as small vessels will be used in the local trade. The dredgers will find it an object to cull their Oysters and return the young ones to the beds ; all laborers having one object in view will work together

in harmony, looking to the trade as a permanent investment, and with a mutual desire to work the beds to the best advantage, and not, as we find it now, on the public beds at large, a general scramble.

A word here to Crisfield, with its very *close* harbor, may prove an advantage in course of time.

Are the people not permitting their cupidity to run away with their reason when they build Oyster houses where vessels have been in the habit of anchoring?

Such steps give rise to many difficult questions: Are they not obstructing navigation? encroaching upon the harbor? To which riparian proprietor is each water lot, or site so occupied, the nearest? In a word, are their titles good?

A little consideration on this subject *may* prevent a great and sudden injury to trade at some future time.

The tongsmen have one advantage—a great one—that all can avail themselves of, and that is to catch and plant during the months when Oysters are not eaten, and thus in summer put in a crop for the winter.

These Oysters would, of course, be put down in sheltered places close at home, where they could be protected, and when the weather was too severe to work upon the natural beds in the oyster-season, the planted beds would furnish them ample employment.

I regret to perceive that our tongsmen do not *generally* avail themselves of this privilege—one that involves comparatively so little hardship and exposure, and offering such a certain profit.

In this privilege, too, they are entirely free, by reason of time and place from the depredations of the dredgers, who cannot plant because they cannot go so far in shore to dredge, and moreover, it would hardly pay to dredge a planted bed.

So much has been said here about the illegal operations of the dredgers, that many persons will ask, why does not the Police Force keep them straight and protect the tongsmen?

The answer is, that the Police Force *has* had a very material effect in checking their depredations and regulating their operations afloat. But *six hundred* fast sailing vessels, scattered over an extent of one hundred miles, north and south, by about seventy east and west, in numerous bays, rivers, inlets, &c., are rather hard to keep the run of,

and the fact that the illegal operations of the oystermen are not altogether suppressed, is evidence of the increasing temptations of the trade, which has assumed such proportions now, that *without* a Force afloat there would be such contention and strife on our waters as to require the Executive to fit out an expedition every week, until the public beds were exhausted.

In England and France there is a guard-boat for every locality.

The State of Virginia has three fast steamers, and dredging is only permitted in *one locality* in the State. Her Force has but one law to execute, ours has *three*.

Risks are run in proportion to the chances of reward. The Federal blockade during the late Revolution never closed a port, although seventeen steamers frequently kept close together off of one port; but the blockade *finally* exhausted the Confederates.

Appended will be found tabulated statistics of this branch of the trade.

CULTIVATION.

This is an object worthy the attention of our citizens everywhere in sight of salt water. All will find it a profitable enterprise, if they will but investigate the subject.

That there have been many failures in attempting cultivation throughout the waters of the Chesapeake, is due, in a great measure, to a want of a knowledge of attending circumstances, for, as I have already remarked, the subject has never yet become a study with us, the natural supply being so great as to convey the impression that no one could well go amiss in planting Oysters in any locality where there was a muddy bottom and a commingling of salt and fresh water. A general idea seemed to be that all *our* Oysters wanted was a *change* to salter water, and they would necessarily grow and fatten, as they improved in flavor. Many know differently now, to their cost.

There are said to be no less than sixty varieties of the Oyster. I am unable to ascertain, as yet, which of them exist in this country, or the distinct peculiarities of such as do exist, but the mass of our people will consider this immaterial, so long as labor is so dear and Oysters so plentiful. Others, again, may think that the State should direct a searching examination of a subject of such public importance,

and involving so great pecuniary value. My purpose here is merely to lay before you certain plain and established facts regarding the cultivation of Oysters as may assist and prompt our citizens to engage in the undertaking.

It is well known among the old oystermen of our State that the same beds will not answer both for breeding and fattening Oysters; that there are soils where Oysters fatten well, but do not breed, and *vice versa*. A report on the composition of the soils of oyster-grounds, &c., by Professor W. K. Sullivan, of the "Royal College of Science," says: "Soils favorable for the reproduction of the Oyster are not always equally favorable for their subsequent development; and again, there are many places where Oysters thrive, but where they cannot breed."

With us this is a good starting-point. If, then, we wish to cultivate, we have only to look for any of the numerous prolific public beds, and get our supply of cultch and Oysters. Next comes the selection of the fattening beds, and this requires a very careful examination, or we fail.

We need not stop to talk about *breeding* yet awhile; if our public beds are properly worked, Nature will supply us with all we want to plant in sheltered places for the winter's work to grow and fatten, and some of these beds, so planted, will spat during the summer and give us young Oysters to spread out and extend them with.

The growing and fattening, alone, however, will be found very remunerative.

One advantage we possess here is the *very* slight rise and fall of the tide, for, as the bay sailors say, "the wind makes the tide."

In Europe the tide rises and falls say from fifteen to forty odd feet; hence, the Oyster beds are affected in a corresponding degree by the amount of heat and light they receive, particularly if sudden extremes of temperature should occur at low water.

But as regards this, we need give ourselves no uneasiness, nor will we have to wait for a particular height of the tide to work our beds conveniently.

It is not sufficient to know that a place has produced fine Oysters; the question must be, in every instance, will it do so *now*?

For fattening purposes a few inches of mud, over a sandy foundation, makes the best bed for an Oyster, provided

the mud possesses the proper ingredients, which we will look into presently.

If the stratum of mud is too thin, the Oyster may not reach it to feed, and there may not be enough in suspension for sustenance; or it may be passed off too rapidly by the tide to admit of deposit. If the mud is too deep the Oyster will not be able to keep open its communication with the water, and it will be smothered.

If coarse sand is stirred up by the rapid ebb and flow of the tide, and held in suspension, it will work into the hinge of the Oyster, and prevent its action, ultimately destroying life.

Many places in the State have produced, and others fattened the finest Oysters, that now will do neither, and Oysters are springing up, as it were, in spots heretofore unknown as Oyster-beds.

The causes are various that produce these changes. The clearing of timber from the adjacent land and the different methods of cultivating the fields change the amount and character of the washings brought to the streams by rains and floods; and ceasing to cultivate land, and permitting a growth of timber, &c., to spring up, withholds the usual supply of deposit. Heavy and continuous gales of wind will change the relative composition of the beds whereon the agitation of the water is sufficient, or by throwing up bars at the mouths of estuaries and inlets affect the inner temperature and the relative amount of fresh and salt water received. Over-dredging will so reduce a bed that it will cease to produce, although many Oysters are left thereon. Such a place, if it is known to have been only reduced by the dredge, and the remaining Oysters are fat, is an excellent place to plant, other considerations being favorable.

As to the composition of the mud, Prof. Sullivan says: "It further appears that the soil of all places successful as fattening stations contains more or less of a fine, flocculent, highly hydrated silty clay, abounding in vegetable and animal matter, derived chiefly from Diatomacea, Rhizopoda and other microscopical organisms, and that the soils of those places which have proved successful as breeding stations always contain some of it, but not necessarily as much as those which fatten; and lastly, that in those places which have proved failures, this peculiar kind of mud is either wholly absent or inferior in quality and quantity."

After analyzing the mud from twelve different extensive Oyster localities of France, England and Ireland, he continues: "In conclusion, I may sum up briefly the principal conclusions to which the study of the soil of Oyster grounds has led me.

"1. That the influence of the soil upon the breeding and growth of Oysters is complicated by temperature, especially during the spawning season; sudden alternations of heat and cold due to currents; alternations of depth of water, especially as regards whether the maximum of sun heat and light concords with low water during the spawning season; velocity of tide; angle of inclination of shore, &c.

"2. That the soil of Oyster grounds may be made up of materials of any of the great classes of rocks, arenaceous, argillaceous, or calcareous, provided they contain,

"3. More or less of a fine, flocculent, highly hydrated silt, rich in organic matter which indicates that Diatomacea, Rhizopoda, Infusoria, and other minute creatures abound.

"4. That the character and abundance of such small organisms in a locality seems to be the true test of a successful Oyster ground."

Most of the difficulties enumerated in the first paragraph do not apply to us, or in a remote degree, by reason of the slight normal variation of tides, which is only one foot and a half; but the freshets, such as do occur in some of the tributaries of the Chesapeake, have a very serious effect. The *tides*, however, are of as little consequence for their speed as for their rise and fall.

We find, then, that our chief care should be given to the composition of the mud on which we plant, and this we can always have analyzed beforehand, to see that a fair proportion of animal and vegetable matter exists.

We experience a difficulty here, however, not felt to the same extent on the other side in Oyster culture, viz.: the severe winters, when everything may be frozen over, and all Oysters in shoal waters killed.

To guard against this, as far as in our power lies, we should seek places where the sunlight can penetrate at all hours of the day, and avoiding the very shoal water, except where the Oysters are well distributed, so as to be covered and exempt from the effects of such violent changes of temperature.

The careless manner in which we plant Oysters in this State is a fruitful cause of failure in the undertaking. We

invest our thousands of dollars and then trust to some uninterested person to put the Oysters down, which they do by dumping them in heaps.

We might as well plant our cereals in this way, with the expectation of future profit. It is a very easy thing to distribute the Oysters equally over the soil, if a system is adopted of staking off the bed at first, and then scattering the Oysters with the shovel as the boat drops from stake to stake.

As to the character of the bottom on which we plant, a moment's reflection will show us that to some degree the best ground for reproduction cannot be the best for growth and fattening.

The former requires the bottom to be well covered with congenial forms, to which the young spat will most readily adhere. If the bed is well protected, they will reproduce in such quantities and so close together that, as they grow, no room will be left for them and the old Oysters to feed and develop, and the substances to which the young adhere occupy much of the space on the beds, and crowd out the Oysters.

A fattening bed, as such, requires no substances to which the spat may adhere. All the space can be given to growth and feeding. If we desire particularly to breed and fatten, too, we could adopt the plan of laying the grounds out with cultch, shells, &c., only on alternate sections, like a chess-board, acre by acre, so that the spat would certainly be caught somewhere by the action of the tides, and every other section left for fattening the grown Oysters, they not being crowded. Nature does both on the same beds, of course; but we know that Nature does not at the same time do the best that can be done for all her productions, and she can afford to waste much toil, of which her hand is more fruitful than that of man. She has the vast deep-water beds that we cannot work to advantage. We must confine ourselves to the narrower limits—the in-shore and comparatively shoal-water places, and make the most of them.

The Oyster of our part of the globe is the finest known. It is larger, fatter, and more delicate, and its growth more rapid. In some localities in the Chesapeake, the Oyster that has been spatted during a summer is fit for the market the second season thereafter; that is, in fifteen months. In Europe, the Oyster is not considered marketable until it is

two years old. Altogether, I am satisfied that we possess advantages for Oyster cultivation greater than those in any other part of the world, and that, as a rule, it is our own fault when we do not succeed.

As a warning not to act inconsiderately in Oyster culture, I quote a few more remarks from Professor Sullivan.

"This problem of the specific influence of the soil is, however, a very difficult and complicated one. First, because it is almost impossible to separate the specific action of the soil from those of other causes;* and next, because, though much has been written on the subject of Oysters, I do not know of any systematic series of experiments carried out upon different soils, and for a sufficient length of time to enable accidental causes to be eliminated, which could afford a clue to the determination of the relative importance of the action of the several causes above enumerated at the different stages of development of the Oyster.

"In the absence of such experiments, it is clearly worth while to give the results of a comparative analysis of muds from well known Oyster localities, made with a view of determining whether the chemical composition, or rather the mineralogical character of the soil exercised any, and if any, what influence upon the growth of Oysters.

"I believe the character and abundance of Diatomacea and Rhizopoda, and other microscopic animals in Oyster grounds is of primary importance in connection with Oyster cultivation.

"A thorough study of a few differently situated Oyster grounds, exhibiting well-marked differences in the character of the Oyster from this point of view by a competent microscopist, acquainted with the classes of plants and animals just mentioned, would be of great scientific interest and practical importance."

A general impression seems to prevail that Oysters spat every year, just as fish spawn, or the animals breed. This is well known to be a great mistake. Not more than twenty per cent. on any bed are believed to spat during a season, and in some large localities not an Oyster will spat for several years; but when a spat fall does come on properly worked and protected beds, it amply pays for the previous failures. The eighty per cent. of Oysters that do not spat

* These "other causes" are not so numerous, or as much to be feared, in this country as in Europe, which we have herein attempted to show.

are, therefore, eatable and in good condition ; and wherever we can know beyond a doubt that such Oysters have just been taken fresh from the water, they are quite as palatable in summer as in winter.

The celebrated Naturalist Kröyer, who undertook an official examination of the Danish Oyster beds, found not more than one Oyster in ten spatting, even in July and August.

In considering the conditions requisite to form a good Oyster ground, I know of no place, so far as my information goes that so nearly fulfills them, as the Chincoteague Sound—for we find there no comparative objection as to “temperature ; sudden alternations of heat and cold, due to currents ; alternations of depth of water, velocity of tide, angle of inclination of shore, &c.”

The soil adapted to the breeding and growth of the Oyster is certainly *there*—and its influence is complicated by few adverse circumstances. But the beds are shockingly foul and unclean, and the common Mussel (*Mytilus Edulis*) has been permitted, as a consequence to cover in some places, and nearly smother the Oyster.

This can be remedied by a free use of light dredges for a year or two, and occasionally thereafter, rendering this Sound the finest ground in the country, every portion of which I believe can be placed under cultivation.

In examining beds for planting, one should be careful to note the shape and relative proportions of the Oyster found there, for it will give some clue to the composition of the soil, before going into a scientific analysis. Thus if the Oyster has a long flat shell with the anterior edges thin, elongated, and scaly, it is evidence of a highly calcareous soil, for the shell has been thus formed by the carbonate of lime eliminated from the mud and deposited by the Oyster during its feeding. If the shell is thick through, with short abrupt edges, the contrary is the case, there is a deficiency of limestone. Either extreme affects the flavor and quality, and in a measure deforms the Oyster.

THE OYSTER LAW

Appears to have become a chronic affection with every session of the Legislature, and the questions are asked will we ever regulate this matter ?

How can the Fishermen know how to invest their money and prepare for the season's work if the law is always being altered and new restrictions placed upon them?

I can only say that these changes are a necessary evil.

The trade is immense, and it is constantly assuming new phases and proportions, one branch affecting to a greater or less degree the operations of the others, and channels of trade opening or closing in different localities, demanding legislation to meet their requirements and the views of the constituency.

The Legislature can remedy much of the difficulty by including all the local laws in one general law, which will prevent any apparent conflict, often of itself giving rise to angry and disturbing litigation when there is no actual intention of violating law. The disagreement of the several Oyster localities of the State as to a general Oyster law is irreconcilable unless a mutual compromise can be effected, and our representatives will, in a measure, act for the good of the whole, and not persist in advancing the peculiar views of their respective constituencies.

During the last session of the Legislature the Oyster Committee consisted of *seventeen* members who frequently sat, during the whole session, examined numbers of fishermen and others in the trade, and never did come to any conclusion as a committee.

The law, as it stands, with the exception of a few amendments, was drawn up or compiled by one member, and put through under a pressure at the last moment.

I mention this in the hope that if any action is taken in this matter it may be deliberate and determined. I think it best to look the truth in the face if it is unpleasant, for we will the sooner come out all straight. The trade is too great; too much labor and capital is involved in this matter to be slighted.

There are those so radical in their views as to advocate the repeal of all law upon the subject, not considering that to do so would be a surrender on the part of the State of all control over her Oyster Fisheries, and that then they would be open to all comers.

The Bay and its tributaries would swarm with dredgers from the north that, together with our own, would sweep the beds in one season. A tongsman could not show his face outside of a creek, and we would surely be getting rid of "the obnoxious Oyster law" with a vengeance.

But if we are to have a law, are we to enforce it, or is it to be like a Chinese regiment with scarecrows in front but no fire?

If we are to enforce it, then how?

We tried the Sheriffs and Constables, and chartering steamers for particular occasions when the trade was about half what it is now. Then we tried one Police steamer, armed and kept constantly cruising, and these plans were found insufficient to enforce the law; and now we have this steamer and two fast sailing vessels well equipped with boats, &c., and if they do not enforce the law the force must be increased, if we can afford it, or the law repealed altogether. The question then is, do they do the duty as well as can be expected?

If there are any doubts upon the subject let a committee be appointed and make a searching examination in order that changes as to materiel or personnel may be made if necessary.

This force is a new thing here and some people have their doubts about it, which should be dispelled if possible. But it won't do to abolish the Force afloat altogether for it would be tantamount to the abolition of all law as far as the protection of our fisheries could be affected.

I doubt if there is an Oyster Fishery in the world that has not a guard boat for its protection and the enforcement of its regulations.

Our Oyster Fisheries are the most valuable in the world and we are a singularly law abiding and unselfish people if the trade can be carried on with a due regard for the public interest and individual rights without a police inspection.

Some prominent persons desire the entire abolition of the Police Force, and placing the enforcement of the law in the hands of the Sheriffs, making it a penitentiary offence to violate it.

These people do not consider that excessive fines and penalties are unconstitutional and opposed to the genius of our Institutions, and that such excess always defeats the objects of law.

Believing that the law will be amended, I respectfully suggest the following changes, viz:

1. That the Comptroller be authorized to deny a license to any party or parties whenever he has reason to believe that he or they are not about to comply in good faith with the requirements of the law as *Citizens of the State*.

2. That vessels loading with Oysters to be carried *out of the State*, be required to pay two cents per bushel to the State.

3. That dredging be prohibited from the 1st of May to the 1st of October, and that it shall be *prima facie* evidence that the law has been violated in this respect if any vessel is found in our waters with dredging apparatus of any kind *on board of her* during the close season.

4. That if any dredging vessel is found *on prohibited grounds* during the season for working with her dredging apparatus on her upper deck, that is, not stowed *below decks*, it shall be *prima facie* evidence that she has violated the law.

5. That if any Oysters under a certain size, say two and a half inches of shell lengthwise, be found in the possession of *any one*, such person shall pay a fine of fifty cents per bushel for all Oysters so found.

6. That the State be granted the right of appeal from the judgment of Justices of the Peace in order to *decide questions of law*.

7. That the fine for not exhibiting the number properly be reduced from one hundred to twenty-five dollars, and that if the number is not carried agreeably to law, it shall be sufficient evidence that such was the *intention*.

8. That for every fine imposed the vessel shall be held liable, and taken in custody until it is paid by either the captain or owners.

9. That all *local* Oyster laws be embodied in and harmonized with the general law.

10. That the appointment of three Fishery Commissioners, of whom the commander of the State Oyster Police Force shall be one, be authorized, to whom shall be referred all matters affecting the Fisheries and Water Fowl interest, for investigation and action within certain prescribed limits of law; and that they be required to examine into the causes affecting any changes in our Fisheries, and report in detail to each session of the Legislature, with suggestions for necessary legislation.

These are the only changes of general interest I recommend; there are several others about which there would be little difference of opinion, and that a better working of the law requires.

THE POLICE FORCE

Consists of one side-wheel iron steamer, 113 tons burthen. Her hull, engine and boiler are very badly constructed, and do no credit to this branch of industry in our State. She is constantly needing repairs.

The last Legislature authorized the construction of two sailing sloops, which were ready for service by the fall of 1870, and have, with the steamer, been constantly on duty ever since, rendering very efficient service in the enforcement of the law.

One of these sloops is stationed in the southern portion of the Bay, from the Patuxent river to our State boundary, including the Tangier Sound and tributaries.

The other sloop has the Bay and tributaries, from the Patuxent up.

They are used principally as scouts, to take notes and report to the steamer, which is kept constantly cruising over the whole ground.

The sloops are authorized to arrest, and try cases, when it can be done without much expense or loss of time and unnecessary risk to perishable cargoes.

Each sloop has a captain and four men, is well equipped and armed, and I have provided them with large, fast sailing canoes, that frequently cruise separate from the sloops, thus covering more ground in the performance of duty.

The enforcement of the Potomac Fishery law, and the State Wild Fowl law, having been added to the duties of the Police Force, it is of course not possible to give so much attention to the Oyster law. The Fisheries on the river, the best Ducking and the best Oyster seasons, all come together soon after the opening of navigation in the spring.

Their extremes in distance are about two hundred and fifty miles apart, and no fuel can be had at intermediate places. Nothing can be assured in the enforcement of these laws, unless a vessel is present or known to be near by; only the steamer can calculate her movements with any degree of certainty, and we therefore perceive that the Force has no idle time.

If any Fishery law is to be *enforced* on the Potomac, the fishermen should be taxed to maintain a Force there during the season, and the same thing with reference to the Wild Fowl law on the Susquehanna flats and in that vicinity. The Oyster Police Force is paid entirely out of the Oyster

fund, and those in the Oyster trade have a prior right to its services, and clearly its Oyster law duties should not be neglected for any other purpose.

The expense of keeping the three vessels on duty is about twenty-one thousand dollars per annum. which is not equal to the amount that has been *added* to the annual receipts into the Treasury since the appointment of the Force by several thousand dollars.

In other words, the Force has increased the net receipts. Virginia has three *steamers*, that cost several thousand dollars per annum more to maintain than our Force.

The year previous to the appointment of the Police Force, the revenue from the Oyster trade was about twenty-eight thousand dollars. Since the Police Force has been in operation the annual gross revenue from this source has been between fifty and sixty thousand dollars.

Next Summer the steamer "Leila" will require extensive repairs to her boiler, that will have to be taken out of her for the purpose.

There will also be much carpenters' and painters' work required at the same time. All the work on the vessel was originally done so badly that the steamer may be said to be kept together by patches.

The repetition in this report, I hope, will be excused—it is caused by the desire to make each subject as complete in itself as possible.

DREDGING.

Date.	Season of.	Number of vessels in the State licensed to dredge.	Tonnage.	Hands employed.	Approximate number of bushels of Oysters taken.	Approximate value of Oysters.	Amount of license money paid to the State.	Oysters val. at 35 cts.	Remarks.
1869-70		642	14,436	4,060	7,190,400	\$2,516,640	\$38,766		
1870-71		597	13,425	3,775	6,686,400	2,240,240	41,587		

It is very hard to get at the *average* value of Oysters in the State, as they sell at different times and places at from fifteen cents to one dollar and a-half per bushel, but they certainly don't *average less* than thirty-five cents, by which all the sums total are herein multiplied.

Oysters taken by every class of vessel and boat for private use, say 2,000,000 bushels *each year*, value \$800,000.

TONGING

Number of Canoes licensed to Tong or Scoop for Oysters in each County and Baltimore City during the Seasons of—

COUNTIES.	No. of Canoes licensed to tong 1869-70	1870-71.	No. of boats licensed to scoop, 1869-70.	No. of boats licensed to scoop 1870-71.	REMARKS.	
					1870-71.	1870-71.
Anne Arundel.....	223	194	.....	.....	No scooping law in this Co.	
Calvert	180	145	.....	.....	"
Charles.....	16	5	.....	.....	"
Dorchester.....	210	331	.....	125		
Kent	77	103	.....	.....	No scooping law in this Co.	
Queen Anne's.....	67	115	.....	.....
Somerset.....	128	178	284	360		
St. Mary's.....	309	267	.....	.....	No scooping law in this Co.	
Talbot.....	202	199	.....	.....	"
Wicomico	115	112	.....	.....	"
Worcester	120	.....	.....	.....	Oyster law abolished 1870.	
Total.....	1647	1649	284	485		

	1869-70	1870-71
Total number hands employed by the <i>canoes</i>	3,410	3,507
Approximate number of bushels of Oysters taken by <i>canoes</i>	2,043,075	2,261,403
Approximate value of Oysters taken by <i>canoes</i>	\$715,076	\$791,491
Amount of license money, including scoops.....	\$9,410	10,536
Oyster fines.....	2,013	1,013

ARRESTS, TRIALS, &c.,

FROM SEPTEMBER 5TH, 1869, TO DECEMBER 1ST, 1871.

DREDGERS.

	Number of boats fined.	Number acquit- ted.	For what offences arrested and tried.	Sums total of fines imposed.
	9	4	Taking Oysters for sale without a license.	\$360 00
	68	3	Dredging on forbidden ground.....	6,280.00
	8	7	Not exhibiting the license-numbers on the sails, agreeably to law.....	612.00
	1	1	Having the wrong captain.....	50.00
	2	...	Fleeing to avoid arrest.....	50.00
Total...	88	15		\$7,352 00
TONGSMEN.				
	26	6	Taking Oysters for sale without license...	\$470 00
	2	...	Not exhibiting the license-number on the boat.....	10 00
Total...	28	6		\$480 00
DUCKERS.				
	2	...	Shooting water-fowl on the Potomac from sink-boats	\$20 00
	1	1	Ditto on Susquehanna flats.....	10.75
Total...	3	1		\$30 75

SUMS TOTAL FROM DREDGING AND TONGING.

Date—Season of.	Total number of bushels of Oysters taken for sale, and for private use.	Total value of ditto.	Total number of hands employed <i>afloat</i> , including those in the "carrying trade."	Total amount of license money paid, including fines, &c.	Total amount of expenses of the Police Force.
1869-70	11,233,475	\$4,031,716	8070	\$50,189	\$18,968
1870-71	10,947,803	3,831,731	7882	53,136	23,330*

NOTE.—*In 1870 the *two sloops* were added to the force.

There were in all one hundred and forty-one trials, not counting the cases of appeal, and \$7,862 75 imposed as fines and forfeitures.

Only about one-third of the fines so imposed have been paid into the Treasury. Some of the money has been paid to informers; some withheld by Justices of the Peace; some disbursed to bear expenses of holding and watching vessels and boats until the fines were paid, or consumed by sales of property condemned, and some of the fines have been remitted by the Governor.

THE POTOMAC FISHERIES.

Having been instructed last Spring by his Excellency, the Governor, to proceed to the Potomac river and co-operate with the Fishery Force of the State of Virginia in the enforcement of the fishery laws, I obeyed as far as it was in my power to do so. The Act of Assembly in force at the present being that known as the law of 1860, is the only one in which the State of Virginia has concurred, agreeably to the compact of 1785.

Our Act of 1870, chap. 205, was before her Legislature, but was defeated, leaving this much vexed question still open, for the law of 1860 had been upon the statute-book for ten years unnoticed; in fact, never was at all applicable to the case, and had it been strictly enforced on the Potomac last season, would have ruined every fisherman, of whatever kind, upon the river.

I had previously received the opinion of the Attorney-General as to the proper construction of this law, which made it clear to me, as soon as I arrived upon the river and became acquainted with the changes that had taken place in the methods of fishing and the customs that had grown up between the fishermen of the two States and of the States themselves, that my task was a very difficult one.

After a consultation with the leading men of the counties interested, it was determined to confine the operations of the force under my charge to the exercise of such influence as it may have possessed among the fishermen to persuade them to observe a mutual regard for the rights and necessities of each other in their several methods of fishing, which course also met the views of the Governor. This had an excellent effect upon the feelings of the people and the trade itself.

It lasted for the time, being a new effort, but in the absence of law would be of no avail another season.

Whilst upon the river I improved the occasion to inquire into the condition of the fisheries and the wants of the people as to a law upon the subject, and respectfully report:

The compact of 1785, between the States of Maryland and Virginia, requires the consent of both States to any law in reference to the Potomac fisheries before it can be enforced. This provision was a necessity of the times—a treaty between separate Powers—two years previous to the adoption of the Federal Constitution, but at the present time is a great stumbling-block in the way of legislative enactment for the protection and encouragement of those fisheries.

I am not aware that *our* Courts have directly asserted the validity of this compact since the adoption of the Federal Constitution, and I may be permitted to say that I do not see that it is now binding upon either State.

The compact, at the time, was believed to be sufficient to regulate the fisheries—when the country was thinly settled and those waters were wholly under the control of the adjacent States—but the General Government stepping into the matter, bringing its right of navigation and fishery; the improvements and changes in the methods of fishing; a more thickly populated country, and changes in the habits and wants of the people, have presented an entirely new question for our consideration. But all our efforts to meet the occasion appear to be in vain; *we* have one view of the question, Virginia has another; the two Legislatures will not agree, and property depreciates, trade declines, and the poor people suffer on the shores of the Potomac *ad interim*.

The Potomac fishery question must take its chances in two Legislatures, instead of one.

I cannot point to any complete remedy that would not at least appear to break faith with Virginia, but we could with justice legislate with regard to our *own* side of the channel, and that, too, in terms of the compact itself. (See *Proviso*, Art. 7.) And in such a law, although there would still be some difficulty with Virginia, we could regulate our own side of the question, now divided in itself, and greatly suffering for the want of legislation.

Formerly all the fishing was carried on by *seines*, each proprietor confined to his particular locality, or working the adjoining shores in common, by agreement with his neighbors beforehand.

In the last fifteen or twenty years the *gill-net* has come into competition with the *seine*, and the fisheries are no longer controlled by the wealthy riparian proprietors. This, of course, brings about a conflict of labor, and hence most of the disturbance of the fisheries in either State, and between the States themselves.

When *seines* only were used, the fishermen were principally confined to their own shores; but the *gill-net* drifts from shore to shore, up and down, everywhere, in its own berth and everybody else's.

It is one of the improvements of the times; it enables the poor man, with hardly anything, to go to work on his own resources, and with his boat and net to follow the fish as they travel from place to place in search of food or to spawn. In this pursuit the *giller* comes in contact with the *seine-hauler*, and certainly encroaches upon his rights. Protection is demanded, and a law enacted to meet the altered condition of things alone can give it.

The use of the *gill-net*, too, opens up the whole river, as it were, to all comers, and the Fisheries appear to be passing out of the hands of the *citizens* of the two States; for, as the law stands, anybody can come and rent a square foot of shore for a pretended base of operation, and then fish any number of boats and nets on the river. The people owning the shores will, of course, in the pursuit of gain, rent as much ground as they can, this one object being greater than the other—that of contributing their individual efforts to a general preservation of the Fisheries.

This is another point for a law to take hold of—to prevent any riparian owner from renting less than a certain extent of shore—that which will and can be occupied in good faith.

The non-residents not only swarm the shores in this way, but without the presence of a Police Force, they live afloat in "arks" and other vessels, and completely overshadow every other interest.

The undue excitement produced by this state of things extends to and affects the mutual relations of the *seine-haulers* themselves, and they now have their complaints of each other as well as of the *gillers*.

The only *important* point of difference between them is this: Some of the *seines* on the river are a mile in length, *independently* of the rope. Such a *seine* must be spread out over half way across the river. It is readily seen then that, if laid out

directly *in front* of its landing, that before it could be hauled on shore, which operation consumes hours, that the strong tide and current of the river would have drifted it far beyond *its* landing. Therefore, in order that the seine may be landed on its *own* shore, it *must* be laid out tideward in the *first* instance, sufficiently far to calculate for the drift to bring it just opposite its *own* shore in the time consumed in hauling in.

In other words, adjoining Seine Fisheries must "lap each other"—the one above laps the one below on the flood, and the latter returns the compliment on the ebb tide.

It sometimes happens, however, that one of two adjoining seine-haulers *can* fish his *own* shore, and he does not wish his neighbor to lap him and take the fish out of his berth; but then this neighbor would lose the use of a valuable Fishery if he did not do so!

The only remedy for this is to require the owners of Fishing Shores to make agreements in writing with their neighbors for each season's work, and file a copy of such in the clerk's office, which copy shall be the law on the subject *as to them* for that season.

I think that these difficulties among *ourselves* can be remedied by a law to be enforced, the compact to the contrary notwithstanding.

As the seine-hauler cannot fish each his own shore, so the gillers have a trouble, and they cannot *drift* on one side of the river only; for, as we all know, the currents follow in the bend of a river, and thus the net is carried first from one side and then to the other—now in Maryland, then in Virginia. (According to the *compact*, but not the *boundary line*.)

Again, if any one finds it an object to violate the law by fishing in any particular way on the *Maryland* shore, he makes the *Virginia* shore his base of operation directly opposite, and *vice versa*.

Thus, practically, such a person has an immediate and safe retreat, considering that it would not pay, as now, to follow the course of law through the executive departments of the two States.

These two latter difficulties must be settled between the two States, or we must assert our boundary line to the southern bank of the river. The people have a right to demand action on the part of their State Governments.

Gilling or drifting nets for fish is every year assuming larger proportions as to material and labor. It is cheaper

and more profitable than Seine-hauling as a general thing, and it is well for all interested to recognize the fact at once; and provide accordingly—to oppose it, is to lose.

The great controversy between the seine-haulers and gillers as to the effect produced, upon the spawning of the fish by either method of fishing requires a careful consideration. It is well known that these fisheries have materially decreased of late years, and the seine-haulers assert with much confidence it is mainly caused by the use of the *gill-net* while the gillers assert the contrary, and point to the fact of a great decrease of the fisheries *before* the use of the gill-net.

A third party are of opinion that clearing the adjoining land of timber and placing it under cultivation; working the surface soil for general and local improvements, and the erection of fortifications and earth works during the last Revolution, have caused the washing of the soil above and below, and the consequent caving in of the river banks to increase to such a degree as to change the character of the feeding and spawning grounds of the fish, and thus to force them to seek more congenial haunts.

The increased washings and cavings in of banks also affect the water by enabling the current to hold in suspension a quantity of earthy matter disagreeable to the fish, and by muddying the water, preventing them from acting except by the touch.

The changes and extremes of temperature are much greater also, for if the adjoining lands were not so much cleared more rain would be absorbed by the earth instead of being carried to the river.

It must be remembered, too, that the fishing season occurs during the season of our longest and heaviest rains.

It is most probable that all the causes enumerated have combined to decrease the supply of our food-fishes, and it is rather too late now to tell in what proportion these causes have had their effect.

Perhaps a careful analysis of the soils of such rivers as Shad and Herring frequent, and not believed to be unnaturally affected by the washings of the banks compared with the soil taken from one of the flats of the Potomac near heavy washings, whereon fish were once known to spawn, but do not spawn now, would throw some light on the subject of one of the supposed causes.

A meteorological table kept at different points on the river in connection with the number of fish caught, their quality, condition, &c., would add another clue.

A careful examination and calculation of the quantity of spawn and young fish hauled up and destroyed on the beach by the seines; a calculation of the relative number of fish disturbed and frightened by the gill nets; diverted from their intended course; caught in the nets and escaping wounded to communicate danger to their fellows, and delayed and badgered during the pressure of desire to spawn, which delay is also fatal to the impregnation of the spawn by the male fish, that follow immediately after the female for the purpose, would all lead to an understanding of this interesting question.

It is difficult for me to say which of the two methods of fishing mentioned does the most injury to the fisheries.

The *heavy* seines sweep over the flats and foreshores and bring up cart loads of young fish and spawn upon the beaches that is there left to rot; many fish also escape frightened and bewildered.

The effect of the gill-nets is principally to bar the passage of the fish up the river; but they do not touch the bottom and therefore do very little injury to the *spawning grounds* or the *spawn itself*.

They must, however, annoy and bewilder the fish greatly and send off numbers wounded that probably influence whole schools.

An inspection of the appended table will show the number of square fathoms of net that may be spread at one time across the river, and knowing the average depth and width of the river at the same place, it will be seen how much room is left for the fish to pass unmolested.

I think that the one method of fishing has done about as much injury as the other.

The Shad and Herring do not all go to the *head* waters of the streams to spawn, but as soon as they strike fresh water, commence to reconnoitre, select their grounds and spawn; and thus they place themselves directly in the way of these wholesale methods of trapping them and destroying their spawn.

The number of *seine*-hauling shores on the river are from the causes mentioned on the decrease.

They now have to compete with the gillers; the supply of fish is diminishing, and the river soil adjoining many of the finest fishing landings has entirely changed. Changes are always taking place in the bottoms of rivers, where shoals rise up in a season; bars are formed, and points washed

away or extended out by the action of floods and freshets, assisted by gales of wind.

But in this connection I have ascertained that there are not now *as many* fishing shores to which fish *resort* as formerly. Is not this evidence, then, that the *general* character of the river-bed has undergone a change, and that the washings must have caused it?

The direct question as to what effect the changes, if any, in the bed of the river may have had on the annual "run" of the Shad and Herring can only be answered by an analysis of the river's soil, as compared with that of other rivers in which Shad and Herring are in abundance.

I observed that the refuse fish, spawn, &c., which collected in vast quantities at the seine-landings on the river were frequently left there altogether, instead of being utilized as manure on the adjoining lands.

There are two "runs" of Shad in the Potomac river, the early Spring "run," and lastly, what is known as the "May Shad;" the latter I thought the finest fish in every respect. I had no time to examine into the peculiarities of each variety, my duties keeping me so actively employed, with the desire to complete the information in detail, regarding the condition of the fisheries, their value, labor and material employed, &c., to serve as a basis for legislation, which I consider the main question, in the present confusion of things.

But the fact of there being two "runs" of Shad—the latter continuing well into the Summer—tends to support the suggestion that the fishing season on the river should be extended to the first of *July* instead of the first of *June*.

In order that the great number of seines and nets used upon the river may not, at *all times* during the season, bar the passage of the fish to their spawning and feeding ground, and otherwise disturb them, and thus decrease the fisheries, the idea occurs to me that it would have an excellent effect to set apart two or three days of each week on which no fishing of any kind whatever be permitted.

It is more necessary now to adopt a *close time* in the fishing season, because the one cause of decrease we can control, and the others we cannot.

This, to be sure, would be hard on the seine-haulers, as the fish come to particular localities at particular times, and do not return, so that the seine-hauler has his *time*, which he must take advantage of, or his chance is lost. But the giller suffers also, for he has fitted out for the season, is

probably a very poor man, and depends for much of the year upon what he can catch during the fishing season, he, too, must "make hay while the sun shines," and he is too poor to wait.

But these are the consequences all over the world in fisheries of all kinds. When the supply is diminishing by reason of too much fishing, the remedy stands right out before you.

Labor must be gradually checked by law, else it will check itself altogether by exhausting the fisheries. The amount of labor employed must be proportioned to the supply of fish, otherwise we might as well send all the fishermen in the country to one river.

But the losses to the fishermen by this plan would be in some measure made up to them by extending the fishing season to the first of *July*, and then they could catch the last "run" of Shad, much of which is now lost to them. There are also two varieties of Herring, (*Clupea Harengus*,) the one coming into the river a month or so earlier than the other. The first is known among the fishermen as the "Branch Herring," the largest of the two, having a large eye and dark back. The last, or "Glut Herring," is said to be the finest fish, as it cures better than the other, the meat leaving the bone, and the juices of the fish appear to be retained. But to the eye of the casual observer, I must acknowledge, it is rather hard to see the difference.

The old fishermen talked very wisely upon the subject, but made no difference whatever in practice.

I have herein remarked that the act of 1860, article 41, Code of Public General Laws, was not now applicable to the Potomac Fisheries; neither is chapter 205 of the Act of Assembly, approved April 4th, 1870, but which, for the want of the concurrence of Virginia, did not become a law.

It may be said, then, that we are without any legal guide whatever in this matter, and must start afresh when the Legislature meets. I think it best that we should do so; but before passing a law for ourselves, I respectfully suggest that two of the Potomac delegation be sent to Richmond immediately upon the meeting of the Legislature, to learn the views of Virginia and ascertain what provisions of law can be agreed to upon the subject.

An important point to be insisted on is, that whenever a complaint is made by or through the officers of one of the

two States to the proper officers of the other State, that the law has been violated by any one acting from the shores of said other State, and resorting there to avoid arrest, it shall be the *duty* of the latter officers to *immediately* arrest and try such case, and that witnesses may be summoned from the former State to appear in the case.

I do not think it necessary to limit the size of the seines and gill-nets, but to let the fishermen fish as they please, provided there are intervals of time in which they *cannot* fish.

The law had better have as few provisions as possible ;— the laboring class of fishermen are generally ignorant people, and a long law, that has to be read over and explained to them a half dozen times, only confuses them and cripples their energies.

If a law is to be enforced upon the Potomac river, a State vessel should be stationed there altogether during the season. The State Oyster Police Force cannot do this without neglecting its other duties ; for the fishing season is the very busiest Oyster season.

A fast sailing cutter, with a fast sailing canoe and swift row-boat attached, would, I think, answer the purpose. A steamer would be a greater expense than the tax on the seines and nets could cover.

The subjoined table will serve as a basis for almost any necessary calculation regarding these fisheries. It is presented here in a condensed form, as being doubtless of sufficient public interest, but the details of every Maryland fishery on the river are in my possession.

The table relates only to the Maryland shore ; double the figures, and we have the Virginia shore included ; that is, *all* the fisheries.

It must be noticed that the gilled fish are sold at a lower price than those caught in the seines. This is because the former are sometimes bruised by the nets, and, probably, having remained in the nets awhile before being taken out.

FISHERY SEASON OF 1871.

How many seines used on the Maryland shore of the Potomac river.....	24
How many square fathoms of seine.....	39,488
Number of men employed by the seines	619
Number of boats employed by the seines.....	74
Number of horses employed by the seines.....	51
Average number of hauls made per day by all the seines.....	72
Number of Shad caught in the season by the seines.....	110,400
Value of Shad " " " "	\$14,353
Number of Herring caught in the season by the seines.....	12,570,000
Value of Herring " " " "	\$50,280
Average number of seine-hauling days in the season.....	39
Average proportion of fish packed at the landings.....	One-fourth
To what markets the fish are generally sent.....	Alexandria and Washington
Average expenses of a seine fishery, working 40 men, &c., seine 800 fathoms, taking wear and tear in.....	\$4,500 to \$5,000
How many gill-nets used on the Maryland shore of the Potomac.....	243
Number of square fathoms of gill-nets used.....	161,446
Number of men employed by the gillers.....	456
Number of boats " "	213
Average number of drifts of each net in the 24 hours.....	3
Average distance drifted over at one time by each net.....	Six miles
Number of Shad caught in the season by the gillers.....	351,800
Number of Herring " " "	2,806,900
Value of Shad caught in the season by the gillers.....	\$38,698
Value of Herring " " "	\$8,421
Average number of gilling days in the season.....	60
To what market the gillers' fish are generally sent.....	Alexandria and Washington
Average expenses of one gill net, say 400 fathoms, boat, &c.....	\$250
Total value of all the fish, (season of 1871).....	\$111,751

Gross receipts of a certain Seine Fishery, said to be the most valuable fishery on the river, for the years

1867.....	\$9,931
1868	10,290
1869	9,997
1870.....	10,467
1871.....	7,260

WATER-FOWL.

Chapter 296, Acts of Assembly, approved April 4th, 1870, requires the commanding officer of the State Oyster Police Force "from the first day of October in each year till the first day of April of the following year, at such times as he shall be able to spare them, to detail a portion of his force, together with a boat or barge, to visit and cruise about the Susquehannah and rivers of this State and enforce the provisions of Article 98, of the Code of Public General Laws relating to Wild Fowl."

The only place in the State where the killing of water-fowl is carried on for sale, as a regular trade, of which I am aware, except by some straggling parties on the Potomac river, is on what is known as the "Susquehannah flats." These flats are formed by the confluence of the Susquehannah and the "North-East" rivers, as also one or two little creeks in the vicinity.

They lie at the very head of the Chesapeake bay, and no part of them, according to the County boundaries, can be said to be within any one county, although they are nearly surrounded by Harford and Cecil counties.

They lie in the State generally, as any shoal in the middle of the Chesapeake would be. These flats averaging a depth of water of three to four feet and covering an area of sixteen square miles, afford the finest feeding grounds for ducks, no other water-fowl being found there, in the State, especially for the celebrated "Canvas Backs" which are the greatest in numbers, and may be literally said to cover the flats. Close to these flats are the two towns of Havre de Grace in Harford, and Port Deposit in Cecil county.

Naturally, not only the laboring classes, but many well-to-do people have turned their attention to sporting on these flats, but nearly every one of them carrying it on as a business for a living.

Peculiar boats, to cruise over the flats under sail, and live in, have been constructed and equipped with all the appliances that ingenuity can devise to enable the sportsmen to kill the greatest number of ducks.

In the neighborhood of these flats, in the rivers and creeks of the adjoining counties are numerous points of land that have always been considered valuable for water-fowl shooting, and as such enhanced the value of the farms to which they are attached.

I am not aware that the owners of these points were ever in the habit of shooting for a market as a regular business, but their supplies of water-fowl were very great and enabled them to form clubs consisting of friends and others from abroad, and in many instances such *points* alone would be rented to them for far more than the whole farm itself. It was the belief of this latter class of sportsmen that the continued and systematic shooting and disturbing of the water-fowl on the Susquehannah flats materially interfering with their inland sport by driving the water-fowl away from the neighborhood generally, that caused the passage of the act of 1870. Agreeably to the requirements of this act and the instructions of his Excellency the Governor, I have spent some time in the State Steamer myself, and also stationed a sloop on the flats to prevent the illegal methods of killing water-fowl practiced there.

During the whole of the performance of this duty myself and officers have met with the most determined opposition on the part of the gunners on the flats, which opposition has caused the law to be more rigidly enforced than I would otherwise have felt it my duty to withdraw a force from the Oyster Police service to do, because it becomes necessary to maintain a proper respect for the laws and authority of the State.

I was aware, as we all are by this time, that the law was very obnoxious to the gunners, and bore hard upon their labor for subsistence, but this does not excuse the gunners for their opposition to its execution, and the Executive of the State has no discretion in the matter.

A President of the United States has said when appealed to to suspend the operation of a law that seemed to oppress a certain class, that the only way to get rid of an obnoxious law was to enforce it strictly.

Generally speaking, I believe this is correct, and perceiving no exception in the case of the Susquehannah flats, I have stationed a vessel and her boats there, and will keep them there in the hope that it may the more *quickly* have the question decided whether the law is to be repealed or not.

The Wild Fowl Law, Art. 98, Code of Public General Laws, is now rather out of date and does not meet the requirements of the water-fowl interest of the State.

General Laws upon such subjects cannot promote local interests everywhere, and this law should certainly be amended in the interest of the gunners on the Susquehannah flats,

because, as strictly enforced, it does *them* much injury, and I cannot perceive that any body else is benefited thereby. Let us look at the case.

The Susquehannah flats have sixteen square miles of ground, covered with the food that the "Canvas Backs" and "Red Heads" prefer to all others, and which can be got in very few places in the country.

It is quite certain, then, that as long as there are any ducks coming to this State, a large proportion will assemble on these flats, and that an almost infinite number can feed there. Suppose, then, these ducks are *not* shot on the flats; that the law keeps every gunner away, how are the shooting-points in the rivers and creeks within twenty and thirty miles around to gain any advantage by this? The ducks will hardly leave the rich food on the flats, where they are *not* shot at, to go elsewhere and *be* shot at. It is possible, that in a few years, if not shot at, they would come in such numbers as to denude the flats of all food, and then be forced to go elsewhere until the food sprang up again.

But surely no one would advocate such a policy as this, that millions and millions of the finest water-fowl should sit undisturbed, season after season, in sight of hundreds of poor people that could make a comfortable subsistence by shooting them; and this to enhance the sport, and value of property elsewhere!

On the other hand, if the ducks are shot at on the flats, they are more apt to go to other places to feed, and to be kept flying to and fro, thus giving the gunners on the inland points more sport, and the enforcement of the law has proved this to be the case.

But there is a happy mean between these extremes, and that the law can get at. Gunners, themselves, on the flats, make a tacit acknowledgment of this fact, when, by agreement among themselves, they shoot only *three* days out of a week (but using "sink" and "sneak-boats," in violation of law), when the Police Force is not present.

I would respectfully recommend that a law be passed for this particular locality, embracing the following provisions, viz:

1. That all persons shooting water-fowl on the Susquehannah flats for sale be required to take out a license, paying so much for each gun and boat used, according to size or dimensions.

2. That gunning on the flats be permitted in any way from sunrise to sunset, for three *stated* days out of each week.

3. That none but *citizens* of this State be permitted to shoot water-fowl on the Susquehannah flats, or to own, in whole or in part, any material used in gunning on said flats.

4. That *any* citizen of this State may license to shoot water-fowl on the Susquehannah flats.

5. That the money collected from licenses, fines and forfeitures be paid into the State Treasury and placed to the credit of the Oyster Fund, to assist in maintaining a vessel to enforce the law.

6. The provisions of this law not to be construed to impair the right of persons owning adjacent shores to shoot water-fowl from any part thereof, or within one hundred yards thereof, in any way other than from "sink" or "sneak-boats," without license.

7. That the material used in violation of this law be confiscated.

8. That all cases of violation of this law be tried in any one of the adjacent counties.

9. That if any person or persons shall interfere by threats or force to prevent any licensed person from executing their lawful privileges on the Susquehannah flats, such person or persons, when convicted before a Justice of the Peace, shall pay a fine of one hundred dollars.

10. That the State Police Force have the authority to arrest, without warrant, for any violation of this law.

It appears to me that there can be no more objection to a license system for water-fowl shooting than for taking Oysters, and not so much as for fishing for Shad and Herring, because the fish only remain with us about one-third the time that the water-fowl do.

Neither the water-fowl or the fish live within our borders altogether, to be sure, but we have the rare feeding-ground which they *must* come to for subsistence.

A stringent law is necessary for this particular locality, if the State intends to deal with the question at all, because of the bad feeling shown by the people in regard to any interference with what they believe to be their peculiar rights, either they must be left alone altogether, or the State must enforce a law so as to command respect.

I will mention two facts here, to show why I write in this way. In one instance when an officer of this Force attempted

to seize a boat used in violation of the law, the owner pointed a gun at the officer, and, with a most insulting appellation, threatened to blow the officer's head off of his shoulders. At the same time a large and excited mob collected on the wharves of Havre-de-Grace, yelling and howling to the gunner to shoot the officer anyhow. The officer evinced a discretion that is not always commendable in the performance of duty, else the gunner would not have had time to have accompanied the pointing of the gun with a threat. Better, perhaps that no blood was shed. This officer and a man who was in the boat with him were sent to Belair, to Court, and testified before the Grand Jury in this case. But no notice whatever, that I am aware of, was taken of it.

It may be that the Grand Jury did not have Section 11 of the Wild Fowl Law before them, which says:

"If resistance be made to the officer engaged in making such arrest or seizures, such resistance shall be deemed a misdemeanor, presentable by the Grand Jury of the county and punishable in the Circuit Court thereof by fine and imprisonment, as other misdemeanors are punished."

Again, when this officer and the man accompanying him were on their return from Belair, they reported to me that they were denied shelter for the night by one of the very gentlemen most influential in having the water-fowl enforcement law of 1870 passed, and in consequence they were compelled to wander about for miles, in bad weather, to seek food and shelter, because the gentleman was afraid that his house, &c., would be burned over him by the duckers, if they knew he had entertained persons from this Force.

Still another instance occurred of an officer being threatened with shooting if he dared to board one of the duckers' "flat-boats," off Havre-de-Grace, for inspection. The boat was finally boarded, however, and the law enforced.

I have endeavored to lay the water-fowl interest of this locality before you as clearly as possible, in order that it may be dealt with understandingly, and that the views of an impartial person may be had, for future legislation.

I have never been able to ascertain the number of gunners employed on the flats shooting for a market; but a correct estimate of the importance of the business may be had from the fact that these gunners often kill from *four to five thousand ducks in a single day*. Canvas Backs are worth one dollar, Red-heads sixty-two cents, and Black-

Heads twenty-five cents a piece. The Canvas Backs are the most numerous.

The question as to a *general* water-fowl law is so well understood by the people of our State that it would be superfluous for me to discuss the matter here.

The point about which there appears to be more said pro and con than any other is, as to the use of "sink" or "sneak" boats, many persons encouraging their use and others strongly opposing it.

For myself I see no objection to them, two or three days out of each week, provided they are not used within one thousand yards of anybody else's property, and that all shooting of water fowl of whatever kind, be prohibited *at night*.

Night-shooting is the great evil, after all. It enables sportsmen to use the immense "swivel gun," carrying a pound of shot, and making noise enough to "rouse out" a whole neighborhood; also the "*battery gun*," consisting of eight and ten musket *barrels*, secured in a horizontal plane to a low bench, the vents close together, and the muzzles diverging so as to cover a quadrant of the horizon, and the priming so arranged that all the barrels are discharged simultaneously, by which method I have known a *cart load* of water fowl killed at *one fire*.

Lastly, the boat with a brilliant light on the bow, such as locomotive engines use in front, that bewilders and confuses the fowl so that they appear to be unable to escape when once within the glare of the light, but such as do escape are apt to leave the feeding ground for a long time.

All of which is respectfully submitted by your obedient servant,

HUNTER DAVIDSON,

Com. Fishery Force,

OF

MARYLAND.

